

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 24. (Canceled)

25. (currently amended) An apparatus for assisting in the identification of a marked liquid, the liquid comprising a plurality of markers miscible with the liquid and present in a predetermined pattern of relative concentrations, the apparatus comprising:

a detector for detecting the plurality of markers and for generating signals indicative of relative concentrations of each of the markers, the signals defining a measured concentration ratio; and

a data processor connected to the detector ~~to receive the signals therefrom, the data processor~~ comprising:

a receiver to receive the signals from the detector and determine therefrom a measured concentration ratio of the markers;

a look-up table storing a plurality of known concentration ratios, each concentration ratio corresponding to the signal from a specific combination of the plurality of markers at predefined relative concentrations; and

a ratio comparison element capable of comparing the measured concentration ratio with known concentration ratios of identified liquids, the known ratios being accessible, via the look up table, to the ratio comparison element, so as to permit the identification of the marked liquid.

26. (previously presented) The apparatus of claim 25, wherein said detector is a spectroscopic detector.

27. (previously presented) The apparatus of claim 26, wherein said spectroscopic detector is an absorption spectrometer.

28. (previously presented) The apparatus of claim 27, wherein said absorption spectrometer is a near infrared spectrometer.
29. (previously presented) The apparatus of claim 27, wherein said absorption spectrometer is a mid-infrared spectrometer.
30. (previously presented) The apparatus of claim 27, wherein said absorption spectrometer operates in the visible spectrum.
31. (previously presented) The apparatus of claim 26, wherein said spectroscopic detector is a fluorescence spectrometer.
32. (previously presented) The apparatus of claim 31, wherein said fluorescence spectrometer is a near infrared spectrometer.
33. (previously presented) The apparatus of claim 26, wherein said spectroscopic detector is a colorimeter.
34. (previously presented) The apparatus of claim 26, wherein said spectroscopic detector is a Raman spectrometer.
35. (previously presented) The apparatus of claim 25, wherein said detector is limited to those portions of the electromagnetic spectrum associated with select vibrational mode signatures characteristic of said plurality of markers.
36. (previously presented) The apparatus of claim 25, further comprising at least one additional detector, wherein the detector is limited to that portion of the electromagnetic spectrum associated with a select vibrational mode signature characteristic of a first marker and wherein the at least one additional detector is limited to that portion of the electromagnetic spectrum associated with a select vibrational mode signature characteristic of another of the plurality of markers.

37. (previously presented) The apparatus of claim 36, wherein the detector measures a nitrile vibration and the at least one additional detector measures an isotopically labeled carbon-nitrile vibration.
38. (previously presented) The apparatus of claim 36, wherein the detector measures infrared absorption band of a nitrile vibration at 2230 cm^{-1} and the at least one additional detector measures an isotopically labeled carbon-nitrile infrared absorption band at 2140^{-1} cm .
39. (previously presented) The apparatus of claim 36, wherein the detector measures a nitrile vibration and the at least one additional detector measures an isocyanate vibration.
40. (previously presented) The apparatus of claim 36, wherein the detector measures infrared absorption band of a nitrile vibration at 2230 cm^{-1} and the at least one additional detector measures an isocyanate infrared absorption band at 2268^{-1} cm .
41. (previously presented) The apparatus of claim 36, wherein the detector measures absorbance at a wavelength of 520 nm and the at least one additional detector measures absorbance at a wavelength of 550 nm.
42. (previously presented) The apparatus of claim 25, wherein said comparison element is a dedicated microprocessor.
43. (Canceled)
44. (previously presented) The apparatus of claim 36, wherein said comparison element is a dedicated microprocessor.
45. (new) A system for assisting in the identification of a marked liquid, comprising;
a plurality of silent markers miscible with a liquid to be identified; and

a detector for detecting the plurality of silent markers and for generating signals indicative of relative concentrations of each of the silent markers; and

a data processor connected to the detector comprising:

a receiver to receive the signals from the detector and determine therefrom a measured concentration ratio of the markers;

a look-up table storing a plurality of known concentration ratios, each concentration ratio corresponding to the signal from a specific combination of the plurality of silent markers at predefined relative concentrations; and

a ratio comparison element capable of comparing the measured concentration ratio with known concentration ratios of identified liquids, the known ratios being accessible, via the look up table, to the ratio comparison element, so as to permit the identification of the marked liquid

46. (new) The system of claim 45, wherein said detector is limited to those portions of the electromagnetic spectrum associated with select vibrational mode signatures characteristic of said plurality of markers.

47. (new) The system of claim 45, further comprising at least one additional detector, wherein the detector is limited to that portion of the electromagnetic spectrum associated with a select vibrational mode signature characteristic of a first marker and wherein the at least one additional detector is limited to that portion of the electromagnetic spectrum associated with a select vibrational mode signature characteristic of another of the plurality of markers.

48. (new) The system of claim 47, wherein the detector measures infrared absorption band of a nitrile vibration at 2230 cm^{-1} and the at least one additional detector measures an isocyanate infrared absorption band at 2268 cm^{-1} .

49. (new) The system of claim 47, wherein the detector measures absorbance at a wavelength of 520 nm and the at least one additional detector measures absorbance at a wavelength of 550 nm.